REMARKS

In the present Amendment, Claims 1 has been amended to recite "a step of adding a second solvent to a solution composed of an object material to be collected and a first solvent, then mixing therewith to form an emulsion containing the object material in the second solvent, in a state of not uniformly dissolved in the second solvent." Section 112 support for this amendment is found, for example, at page 4, lines 2 to 7 of the specification. No new matter has been added, and entry of the Amendment is respectfully requested.

Claims 1-11 are pending.

In paragraph No. 3 of the Action, Claims 1, 2, 3 and 5 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Ester et al (US 4,036,890).

In paragraph No. 6 of the Action, Claims 7-11 have been rejected due their direct or indirect dependency on rejected Claim 5.

Applicants submit that these rejections should be withdrawn because Ester et al does not disclose or render obvious the present invention.

Claim 1 relates to a method for collecting an object material from a solution, which comprises the following steps:

(1) a step of adding a second solvent to a solution composed of an object material to be collected and a first solvent, then mixing therewith to form an emulsion containing the object material in the second solvent, and

(2) a step of separating thus obtained emulsion from the solution.

In step (1) , an emulsion containing the object material is formed in a second solvent, by adding the second solvent to a solution composed of the object material and a first solvent; and

in step(2),the emulsion containing the object material is separated from the solution. Here, the second solvent phase containing the emulsion is separated from the first solvent phase.

Further, as recited at page 4, lines 8-13 of the present specification, the rate of the object material to the first solvent in the formed emulsion became extremely higher than that of the object material to the first solvent in the solution, namely, the object material in the first solvent can be effectively concentrated. See, also Examples 1 and 2 at pages 6 and 7 of the specification.

After the separation step, the object material can be collected from the emulsion by a method of, for example, subjecting the emulsion to centrifugal separation, or collecting through extraction from the emulsion using an extractant (page 5, lines 3-9 of the specification).

The Examiner states:

> "Ester et al. clearly anticipates claim 1 by teaching the isolation of cyclic organic hydroperoxides (see column 1, line 64 through 66) wherein the hydroperoxide exist initially in solution with the organic precursor (the first solvent) from which it was formed which is extracted (the second solvent) forming an aqueous phase and an organic phase in the form of an emulsion. Treatment of this emulsion with a suitable washing agent such as water results in clear separation of the layers, and the organic phase is isolated in a separator (see page 3, line 5 through 25)."

Applicants respectfully disagree.

Ester et al discloses:

> "The cyclic hydroperoxide produced according to this invention can be separated from the reaction mixture and formed into more concentrated solutions if desired. The reaction mixture can also be

> subjected to an alkaline wash and, if necessary, a water-washing treatment following oxidation (column 2, lines 61-66)."
> "More particularly, the hydroperoxide produced according to the invention maybe concentrated and separated from the reaction mixture by extraction and decantation, wherein it is separated into an aqueous and organic phase. The upper layer contains the hydroperoxide (the object material) dissolved in hydrocarbon (the first solvent) in the form of an emulsion which cannot be worked up directly. Treatment of this product with a suitable washing agent (the second solvent) such as with water or a mono or polyvalent alcohol-for instance, methanol or ethylene glycol or glycerol-results in an extremely rapid and clear separation of the layers. The treatment is carried out in a second separator and a very pure hydroperoxide solution separating out as the upper layer (column 3, lines 5-18)."

In Ester et al, the upper layer (hydrocarbon layer) contains the hydroperoxide (the object material) dissolved in hydrocarbon (the first solvent) in the form of an emulsion. The emulsion taught by Ester et al is formed in the first solvent, and thus clearly different from the emulsion of the present invention, which is formed in the second solvent.

Further, in the present invention, as stated above, the rate of the object material to the first solvent in the formed emulsion became extremely high, namely, the object material is effectively concentrated in the emulsion, by adding the second solvent into a solution composed of the object material and a first solvent. In other word, the object material is concentrated in the formed emulsion.

In contrast, Ester et al teaches the breaking of emulsion in order to achieve clear separation of the layers.

Further, Ester et al teaches concentration method of the cyclic hydroperoxide (the object material) in solution by using a film evaporator or by vacuum distillation (col. 3, lines 43-45 and Examples). However, Ester et al does not teach the concentration method of the object material in the formed emulsion of the present invention. Therefore, the present invention is not anticipated by Ester et al.

In view of the above, reconsideration and withdrawal of the §102(b) rejection(s) based on Ester et al are respectfully requested.

In paragraph No. 8 of the Action, Claim 4 ha been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ester et al, and further in view of Nekrasov et al (Chemistry and Technology of Fuels and Oils, 1980, 16(2), 99-103).

In paragraph No. 12 of the Action, Claim 6 ha been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ester et al, and further in view of USEPA Contract Laboratory Program Statement of Work for Organics Analysis, May 1999, Section 10.1.3.1.3 (CLP SOW).

Applicants submit that the above two rejections should be withdrawn for essentially the same reasons that the §102(b) rejection based on Ester et al should be withdrawn, as discussed above. Nekrasov et al is relied upon as teaching the production of emulsions using ultrasonic devices and CLP SOW is relied upon as teaching the use of centrifugation as a separation method. Nekrasov et al and CLP SOW do not make up for the deficiencies of Ester et al.

Allowance is respectfully requested. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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